REMARKS

This amendment is submitted for consideration before examination on the merits.

A separate sheet containing the amended and new claims is also attached for the examiner's use.

Respectfully Submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence along with the attached claims and clean claims are being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Assistant Commissioner of Patents, Washington D.C. 20231

On February 21, 2002, Kimberly Atwood

(Signature)

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(Typed name of person signing)

1. (Amended) A multi-well membrane filter[, the filter] comprising:
a perforated support [characterized by through holes not having been molded therein] , the perforations of the support forming two or more through holes through the support; and a membrane filter fixed to said support so at least one side of the at least two or more through holes are covered such that the device has at least two wells suitable for receiving material to be assayed.

2. (Amended) The multi-well membrane filter of claim 1[,]wherein the support is selected from the group consisting of [includes] glass, metallic materials, ceramic materials, elastomeric materials, coated cellulosic materials and polymeric materials.

3. (Cancelled) The multi-well membrane filter of claim 1, wherein the support includes metallic materials.

4. (Cancelled) The multi-well membrane filter of claim 1, wherein the support includes ceramic materials.

5. (Cancelled) The multi-well membrane filter of claim 1, wherein the support includes elastomeric materials.

6. (Cancelled) The multi-well membrane filter of claim 1, wherein the support includes coated cellulosic materials.

7. (Cancelled) The multi-well membrane filter of claim 1, wherein the support includes a polymeric material.

8. (Amended) The multi-well membrane filter of claim 1[2,] wherein the support is a polymeric material selected from the group consisting of [includes] polyethylene, acrylic, PTFE, polycarbonate and styrene.

9. (Amended)The multi-well membrane filter of claim 1[2,] wherein the support is an [polymeric material includes] acrylic.

10. (Amended) The multi-well membrane filter of claim 1[2,] wherein the support is a [polymeric material includes] PTFE.

11. The multi-well membrane filter of claim 1[2,] wherein the support is a [polymeric material includes] polycarbonate.

12. The multi-well membrane filter of claim 1[2,] wherein the support is a [polymeric material includes] styrene.

13. The multi-well membrane filter of claim 1, wherein the support and membrane are configured to have at least 96 wells.

14. (Amended)The multi-well membrane filter of claim 1[3,] wherein the support and membrane are configured to have at least 384 wells.

15. (Amended) The multi-well membrane filter of claim 1, wherein the at least two wells have different volumes.

16. (Amended) The multi-well membrane filter of claim[s] 1 [and 14,] wherein the volume of each well is in the range of 50 to 150 microliters.

17. (Amended)The multi-well membrane filter of claim 1[6,] wherein the volume of each well is in the range of 70 to 130 microliters.

18. (Amended)The multi-well membrane filter of claim 1[,] wherein the at least two cells have different shapes.

19. The multi-well membrane filter of claim 1 further comprising an underdrain laminated to the opposite side of the membrane.

20. The multi-well membrane filter of claim 1, wherein the membrane contains patterned porous structures.

21. A method of producing a multi-well membrane filter device, the method comprising:
selecting a pre-formed support suitable for affixing a membrane thereto;
removing material from such pre-formed support so as to form substantially aligned through holes therein;
selecting a membrane suitable for filtering solutions in a laboratory setting; and
forming wells by laminating the membrane to the support.

22. The method of claim 21 further comprising extruding a material to form the pre-formed support.

23. The method of claim 21, wherein material is removed from the pre-formed support by selectively drilling out material to be removed.

24. The method of claim 21, wherein material is removed from the pre-formed support by selectively punching out material to be removed.

25. The method of claim 21, wherein material is removed from the pre-formed support by selectively burning material to be removed.

26. The method of claim 21, wherein material is removed from the pre-formed support by selectively dissolving material to be removed.

27. The method of claim 21, wherein the membrane is laminated to the support in a web converting process.

28. The method of claim 21, wherein the membrane is laminated to the support by diffusion bonding.

29. The method of claim 21, wherein the membrane is laminated to the support by adhesive bonding.

30. The method of claim 21, wherein the membrane is laminated to the support by welding.

31. The method of claim 21, wherein the membrane is laminated to the support by thermal bonding.

32. The method of claim 21 further comprising the step of making the seal formed around the individual wells after the lamination step impervious to the filtrate.

33. (New) A method of producing a multi-well membrane filter device, comprising the steps of:

selecting a pre-formed individual or continuous support sheet of a predetermined thickness;

selectively forming through holes corresponding to a desired well configuration and in a desired well matrix array into the support sheet by a material removing process;

attaching a filter membrane by a laminating process to one side of the support sheet provided with the through holes.

34. (New) The method of claim 33 wherein the pre-formed support sheet is an extruded material.

35. (New) The method of claim 33 comprising the step of maintaining the support sheet as continuous web during the steps of forming the through holes and attaching the filter membrane and subsequently cutting the device to a desired size.

36. (New) The method of claim 33 wherein the material removing process applied in the step of selectively forming the through holes into the support sheet is one selected from the group consisting of drilling, punching, burning and dissolving.

37. (New)The method of claim 33 wherein the laminating process for attaching the filter membrane to the support sheet is one selected from the group consisting of a web converting process, diffusion bonding, adhesive bonding, welding and thermal bonding.

38. (New) The method of claim 33 further comprising the step of making the areas of the filter membrane around the individual through holes impervious to a filtrate, wherein this step is performed after, immediately before or simultaneously with the attaching step.

39. (New) The method of claim 33 further comprising the step of making the areas of the filter membrane around the individual through holes impervious to a filtrate and wherein the step is selected from the group consisting of collapsing pores in the filter membrane, breaking or removing filter membrane, applying a hydrophobic barrier and filling membrane pores with epoxy.

40. (New) The method of claim 33 further comprising a step of laminating an underdrain layer to the outer surface of the filter membrane.

41. (New) The method of claim 33 wherein the pre-formed individual or continuous support sheet is selected from the group consisting of glass, metallic materials, ceramic materials, elastomeric materials, coated cellulosic materials and polymeric materials.

42. (New) The method of claim 33 wherein the preformed support sheet is a polymeric material selected from the group consisting of polyethylene, acrylic, PTFE, polycarbonate and styrene.

43. (New) The method of claim 33 wherein a volume of the wells defined by the configuration of the through holes and the thickness of the support sheet is in the range of 50 to 150 microliters.

44. (New) The method of claim 33 wherein at least two of the through holes on a filter device have different configurations.

45. (New) The method of claim 33 wherein the well array of a filter device comprises at least 96 well.

46. (New) The method of claim 33 wherein the well array of the filter device comprises at least 384 wells.

1. A multi-well membrane filter comprising:
   a perforated support, the perforations of the support forming two or more through holes through the support; and a membrane filter fixed to said support so at least one side of the at least two or more through holes are covered such that the device has at least two wells suitable for receiving material to be assayed.

2. The multi-well membrane filter of claim 1wherein the support is selected from the group consisting of glass, metallic materials, ceramic materials, elastomeric materials, coated cellulosic materials and polymeric materials.

8. The multi-well membrane filter of claim 1 wherein the support is a polymeric material selected from the group consisting of polyethylene, acrylic, PTFE, polycarbonate and styrene.

9. The multi-well membrane filter of claim 1 wherein the support is an acrylic.

10. The multi-well membrane filter of claim 1 wherein the support is a PTFE.

11. The multi-well membrane filter of claim 1 wherein the support is a polycarbonate.

12. The multi-well membrane filter of claim 1 wherein the support is a styrene.

13. The multi-well membrane filter of claim 1, wherein the support and membrane are configured to have at least 96 wells.

14. The multi-well membrane filter of claim 1 wherein the support and membrane are configured to have at least 384 wells.

15. The multi-well membrane filter of claim 1, wherein the at least two wells have different volumes.

16. The multi-well membrane filter of claim 1 wherein the volume of each well is in the range of 50 to 150 microliters.

17. The multi-well membrane filter of claim 1 wherein the volume of each well is in the range of 70 to 130 microliters.

18. The multi-well membrane filter of claim 1 wherein the at least two cells have different shapes.

19. The multi-well membrane filter of claim 1 further comprising an underdrain laminated to the opposite side of the membrane.

20. The multi-well membrane filter of claim 1, wherein the membrane contains patterned porous structures.

21. A method of producing a multi-well membrane filter device, the method comprising:
selecting a pre-formed support suitable for affixing a membrane thereto;
removing material from such pre-formed support so as to form substantially aligned through holes therein;
selecting a membrane suitable for filtering solutions in a laboratory setting; and
forming wells by laminating the membrane to the support.

22. The method of claim 21 further comprising extruding a material to form the pre-formed support.

23. The method of claim 21, wherein material is removed from the pre-formed support by selectively drilling out material to be removed.

24. The method of claim 21, wherein material is removed from the pre-formed support by selectively punching out material to be removed.

25. The method of claim 21, wherein material is removed from the pre-formed support by selectively burning material to be removed.

26. The method of claim 21, wherein material is removed from the pre-formed support by selectively dissolving material to be removed.

27. The method of claim 21, wherein the membrane is laminated to the support in a web converting process.

28. The method of claim 21, wherein the membrane is laminated to the support by diffusion bonding.

29. The method of claim 21, wherein the membrane is laminated to the support by adhesive bonding.

30. The method of claim 21, wherein the membrane is laminated to the support by welding.

31. The method of claim 21, wherein the membrane is laminated to the support by thermal bonding.

32. The method of claim 21 further comprising the step of making the seal formed around the individual wells after the lamination step impervious to the filtrate.

33. A method of producing a multi-well membrane filter device, comprising the steps of:

selecting a pre-formed individual or continuous support sheet of a predetermined thickness;

selectively forming through holes corresponding to a desired well configuration and in a desired well matrix array into the support sheet by a material removing process;

attaching a filter membrane by a laminating process to one side of the support sheet provided with the through holes.

34. The method of claim 33 where in the pre-formed support sheet is an extruded material.

35. The method of claim 33 comprising the step of maintaining the support sheet as continuous web during the steps of forming the through holes and attaching the filter membrane and subsequently cutting the device to a desired size.
36. The method of claim 33 wherein the material removing process applied in the step of selectively forming the through holes into the support sheet is one selected from the group consisting of drilling, punching, burning and dissolving.
37. The method of claim 33 wherein the laminating process for attaching the filter membrane to the support sheet is one selected from the group consisting of a web converting process, diffusion bonding, adhesive bonding, welding and thermal bonding.
38. The method of claim 33 further comprising the step of making the areas of the filter membrane around the individual through holes impervious to a filtrate, wherein this step is performed after, immediately before or simultaneously with the attaching step.
39. The method of claim 33 further comprising the step of making the areas of the filter membrane around the individual through holes impervious to a filtrate and wherein the step is selected from the group consisting of collapsing pores in the filter membrane, breaking or removing filter membrane, applying a hydrophobic barrier and filling membrane pores with epoxy.
40. The method of claim 33 further comprising a step of laminating an underdrain layer to the outer surface of the filter membrane.
41. The method of claim 33 wherein the pre-formed individual or continuous support sheet is selected from the group consisting of glass, metallic materials, ceramic materials, elastomeric materials, coated cellulosic materials and polymeric materials.
42. The method of claim 33 wherein the preformed support sheet is a polymeric material selected from the group consisting of polyethylene, acrylic, PTFE, polycarbonate and styrene.
43. The method of claim 33 wherein a volume of the wells defined by the configuration of the through holes and the thickness of the support sheet is in the range of 50 to 150 microliters.
44. The method of claim 33 wherein at least two of the through holes on a filter device have different configurations.
45. The method of claim 33 wherein the well array of a filter device comprises at least 96 well.
46. The method of claim 33 wherein the well array of the filter device comprises at least 384 wells.